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ABSTRACT

Systematic observation techniques were used for analyzing both the social skills development and program reactions of 3- to 5-year-old children to the Appalachia Educational Laboratory television program "Around the Bend". One specially designed observational system consisted of 28 categories of social skills under six headings and permitted viewer behavior to be recorded on a reasonably low level of abstraction. However, the observational system lends itself to a variety of alternative forms of classification and data analysis. Results from first use of this observational scheme indicate that televiewing in the mobile classroom contributed to the development of social skills assumed important in the learning process within a socially structured environment. Another specially designed observational technique evaluated the effect of individual programs in encouraging a viewer's overt reactions during a telecast. Eight paraprofessionals observed and coded the responses of 270 children to suggestions made by the television "teacher." Coding was done at 5-minute intervals on a rotated, random schedule over 133 programs. Data indicated age and sex differences in the children's reactions to a program. The television programs were most stimulating to 4-year-old subjects and were of more interest to girls than to boys. (WY)

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ANALYSIS OF CHILDREN'S SOCIAL SKILLS DEVELOPMENT AND THEIR REACTIONS TO A PRESCHOOL TELEVISION PROGRAM

by

Deagelia Pena and George Miller

Appalachia Educational Laboratory, Inc.

The Appalachia Educational Laboratory (AEL) has recently completed its three-year project to develop a viable alternative to conventional kindergartens which are prohibitively expensive in mountainous terrain. This alternative consists of a daily half hour television program, Around the Bend, weekly visits in homes by paraprofessionals, and weekly visits by a mobile classroom. Assuming that instruction is most effective when the learner is an active participant, the activities in all three components are designed to increase the involvement of the three-, four-, and five-year-olds participating in the project.

In studying the effectiveness of AEL's Early Childhood Education Program there are certain skills and behavior that are not measurable by a paper and pencil test. Likewise, the effectiveness of a television program for young children may be analyzed by means of the children's reaction to the program, in addition to the standard cognitive tests. Systematic observation techniques were used for analyzing both the social skills development and the reactions to AEL's television program. The purpose of this paper is to illustrate procedures for the analysis of systematic observation data on preschool children.

We will first discuss the analysis of the children's social skills development and then the analysis of the children's reactions to AEL's preschool television program.

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Social Skills Development

The observational system consists of 28 categories of social skills. These are listed in TABLE 1. These 28 categories fall under six major classifications -- initiation, question or request for help, giving help, refusing help, group consciousness, and response to peer. As a setting for this observational system, a situation in which children will have the opportunity to demonstrate the social skills to be observed is first created. One example of this situation is having four children (in each session) place model furniture in a model house. The children are videotaped for a specified length of time.

Each category is then recorded by using a two-digit code (see TABLE 1). Approximately every three seconds, the coder who is observing the videotape key-punches (using a key-punch machine) the numerals corresponding to the category that best describes the activities of the previous three seconds. This process continues for the length of time the session lasts.

A systematic observation of social skills among preschool children requires that behavior be recorded in a reasonably low level of abstraction, since any higher level may easily be derived from the prototype categories. The 28 mutually exclusive and totally inclusive categories were developed with the idea of maximizing information initially, from which other variables may be derived.

There are different ways of obtaining variables for analysis. First, the 28 categories are themselves variables. We shall call these primary variables. Second, <u>combinations of categories</u> like verbal initiation

(11, 13), non-verbal response (71, 72, 73, 74), or different antagonistic activities (13, 14, 63, 73, 64, 74) as proportions of the total tallies might be the variables of interest.[1] As TABLE 1 shows, the 28 categories are subcategories of a broader set of six major categories. Furthermore, the 28 categories may also be dichotomized into verbal or non-verbal, and into facilitating or nonfacilitating behavior. We shall call these the derived variables. Third, since the interaction is recorded at a constant (three second) interval the social skills may be viewed with reference to the sequence by which categories occur. For example, the same category may occur as frequently in two groups of children being compared, yet the discriminating variable is the preceding behavior or the behavior which follows; that is, the variable of interest would be a pair of categories occurring in succession.

The variables just discussed may be analyzed by use of conventional statistical procedures, such as the analysis of variance. In the AEL study some of the variables were analyzed by means of a three-factor ANOVA; the factors were treatment (experimental and control), age (three-, four-, and five-year-olds), and sex grouping (all-male, all-female, mixed).

TABLE 2 demonstrates the use of the categories as the primary variables of interest. In the table, a comparison is made between the expected and observed frequencies of tallies on each category for the two treatment groups. The two groups were compared in direction and size of deviation from their respective expectations. For example, category 21 shows that the Package group tended to ask more questions of peers than the TV-HV;

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[1]The commas signify addition of frequencies under the indicated category

the Package group had 174 tallies on this category compared to the expected 153; on the other hand, the TV-HV had only 134 tallies compared to the expected 155 tallies.

The operational definitions of five derived variables follow: The number between parentheses is the category code, and the commas indicate addition of the frequencies in those categories.

Variable 1. Proportion of time spent talking:

$$\frac{(11), (13), (15), (21), (22), (24), (61), (62), (63), (64)}{\text{Total tallies}}$$

Variable 2. Proportion of time spent participating with group:

$$\frac{\text{Total tallies} - (53), (54), (55), (56)}{\text{Total tallies}}$$

Variable 3. Proportion of time getting distracted:

$$\frac{(56)}{\text{Total tallies}}$$

Variable 4. Proportion of need for security:

$$\frac{(24), (25), (55)}{\text{Total tallies}}$$

Variable 5. Proportion of antagonistic activities:

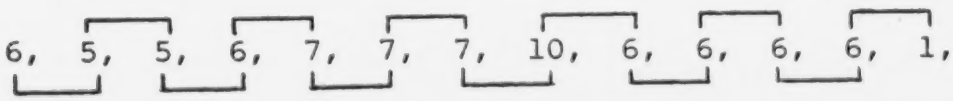
$$\frac{(13), (14), (42), (63), (73), (64), (74)}{\text{Total tallies}}$$

By reducing the 28 categories to ten categories (five facilitating and five nonfacilitating), ten other variables may be derived from the original 28. TABLE 3 shows this reduction. There are fifteen new derived variables mentioned here. A summary of the ANOVA results for AEL data is given in TABLE 4. Figure 1 illustrates a significant age-sex grouping interaction on one variable.

The string of numbers representing the categories observed in an interaction sequence may be tabulated in a transition matrix; the matrix

is a display of paired categories of interaction and "transition" refers to the change from one category to the next, as the coding for each subject takes place at approximately three-second intervals.

Thus, for the ten category system of TABLE 3, the series of numbers corresponding to the categories may be tallied into a ten by ten matrix (either for each subject or for a total group) one pair at a time, so that the second number of the previous pair is the first number of the next pair. To illustrate, consider the sequence



which an observer listed at the approximate rate of one code every three seconds, while watching the videotape. Every pair connected by a bracket was tallied into a matrix so that the first number of a pair designates the row of the cell and the second number designates the column of the cell where the tally for the pair is to be entered. Thus, according to the above illustration, the first tally goes into the sixth row, fifth column, the second tally goes into the fifth row, fifth column, ..., and the last tally goes into the sixth row, first column.

TABLES 5 and 6 are composite millage matrices (matrices with cell entries representing frequencies per thousand tallies) for the Package and TV-HV components respectively. Each cell is identified by its row and column categories which indicate the transition from one category to the next category. The diagonal cells from top left to bottom right are the "steady-state" cells and each gives the total number of times that a category follows the same category in a three-second interval of coding.

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Some analyses of these transition frequencies were made for the AEL data but we don't have enough time to discuss the results. The detailed results are in our Technical Report No. 7, copies of which may be requested from the Laboratory.

Another way of looking at the social skills data is by means of the "time-line" graph. It is a time-sequence graphical display of what goes on every unit time interval (three seconds in the AEL study) so that the change in behavior is seen by fluctuations, and the length of stay in a given state (category) is represented by the length of the horizontal bars across the graph. This was initiated for the Flanders interaction analysis system.[2] First, the 28 categories were grouped into seven categories such that category four was a "neutral" category midway between three non-facilitating (categories 1, 2, 3) and three facilitating categories (5, 6, 7). The following is a list of the seven categories and the equivalent combinations of the original 28 categories:

1 Antagonistic response/initiation (13, 14, 63, 73, 64, 74)

2 Refuses to help (41, 42)

3 Leaves group (53, 54, 55, 56)

4 Works quietly with group (52)

5 Constructive response (25, 51, 61, 71, 62, 72)

6 Gives help (31, 32)

7 Constructive initiation (11, 12, 15, 21, 22, 23, 24)

The seven categories were approximately ordered from least facilitating (category 1) through most facilitating (category 7).

FIGURES 2 and 3 are two illustrations of actual data. No analyses have been made of time-line displays for the AEL data. However, they are

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[2]Flanders, Ned A., Analyzing Teaching Behavior, Addison and Wesley Publishing Company, Reading, Massachusetts, 1970; pp. 161-168.

presented here to show the possibility of using this technique for analysis and developing the necessary computer programs. As further illustration, FIGURES 2 and 3 show that subject one and subject two started by quietly working with the group on the house model. However, subject one had only 7 tallies (or stayed 21 seconds) in that state (4), then acted in a most facilitating way by constructive initiation (7). On the other hand, subject two had 27 tallies (or stayed 81 seconds) in state (4) then acted in a slightly nonfacilitating way by leaving the group activity (3). While both subjects showed facilitating behavior now and then, as displayed by the crests, it is also seen that subject one had more and longer crests, i.e., more and longer runs of facilitating behavior. One can go on and on and find interesting contrasts depending on the objective or the interaction sequence, directly as observed.

The recording and analysis of social skills among preschool children was an innovative approach; a systematic observation of interaction among groups of children in the Early Childhood Education project was tried for the first time. The results included a range of statistical significance, with a meaningful pattern for the AEL ECE program. There was strong indication that the mobile classroom contributed to the development of social skills which were assumed important in the learning process within a socially structured environment.

The results of this initial attempt of analyzing social skills were encouraging for both the use of the mobile classroom as a third ECE component and the use of the new social skills category system as a means of systematically recording interaction among preschool children.

VIEWER REACTIONS TO AEL'S PRESCHOOL TELEVISION PROGRAM

This section describes a technique which can be used to provide both formative and summative evaluation of television programs designed to promote educational development in three-, four-, and five-year-old children. As one might expect, the television component has the greatest difficulty in promoting interaction. Therefore, an effort was made to identify those activities and techniques which are most effective in eliciting overt responses from the viewers. The AEL television program focuses around a young woman, "Patty", who, as a friend of the viewers, has experiences and does things in her home which viewers often do at the same time in their homes. The activities are designed to foster a strong personal relationship between Patty and the viewers. This, and the tendency of preschool children to react overtly during the telecast, makes it possible to use a systematic observational system to evaluate the effect of each program on the viewers. The categories of this system and the basic ground rules are presented in TABLE 7.

The project employs eight paraprofessionals, each of whom watch the television program with a child every morning in his home. The program is observed with a different child each day. In a manner as inconspicuous as possible, each paraprofessional codes the behavior of the child she is observing on the code sheet presented in FIGURE 4. The columns indicate the categories of behavior. The 28-minute program is divided into five, five-minute intervals and one, three-minute interval as indicated by the rows.

Every time the television "teacher" makes a suggestion, asks a question, or attempts to elicit a response from the viewer, the home visitors makes a tally in one of the first three columns. This tally indicates whether the

viewer responded verbally, non-verbally, or not at all. The remaining four columns represent viewer behaviors that were not elicited. A tally is made in the appropriate column each time one of these behaviors occur. To the right of the matrix are the numerals 0, 1/4, 1/2, 3/4, and the word ALL. At the end of each five-minute interval, the paraprofessional circles the figure that most closely represents the amount of time the viewer had his eyes on the television screen.

At the bottom of the code sheet is a place to write remarks. This area is used to describe unusual circumstances occurring during the program such as prompting by the mother, a paddling, or anything that had a significant positive or negative effect on the viewer. Reactions, in behavioral terms, to specific segments are also written here.

In the AEL study the group of children observed watching the program each week was rotated so that, in a random fashion, all 270 children in the sample were observed an equal number of times. The eight code sheets for each day were then compiled to form one matrix that is interpreted. The following information can be found for each five-minute intervals as well as for the program as a whole:

1. The proportion of questions, suggestions, and directions that elicited a verbal or non-verbal response from the viewer.

2. The proportion of unelicited positive behavior to unelicited negative behavior of the viewer.

3. The average number of acts of unelicited positive behavior.

4. The proportion of time spent by the viewer with his eyes on the television screen.

It must be remembered that the data were taken from observing only eight viewers of each television program. Thus, conclusions cannot be drawn from one observation. However, when a particular programming technique which occupies most of a five-minute interval is used on several

occasions and that interval of time consistently rates high or low on one of the calculated variables, a decision regarding its continued use can be objectively and reliably made. When used in this manner, the data gathered using this observational system can be used to answer formative evaluation questions such as those below:

1. What types of questions and techniques of questioning are most effective in eliciting verbal responses?
2. What is the optimum number of questions that should be asked in a given time interval, given a specific purpose?
3. What activities are most effective in eliciting verbal and non-verbal indications of enthusiasm?
4. What types of music and songs are most effective in getting viewers to dance and sing?
5. What techniques are most likely to get viewers to repeat the sounds of letters and learn given cognitive skills?
6. What camera techniques, types of animation, and method of monologue are best in eliciting the desired effect on the viewer?
7. What are the optimum lengths of various activities in terms of achieving given objectives?
8. What types of stories should be read and what types of presentations are most effective in maintaining interest?

Finding answers to these types of questions is made easier by having written scripts of each program broken into five-minute segments or by having a secretary record a description of what is taking place during each segment. Recording the number of questions, suggestions, and directions stated by the television "teacher" enables the checking of coder reliability.

Of the 170 AEL programs transmitted during the second year, observational data of viewer responses were collected on 133 programs. These included 37 programs produced during the first year and 96 produced during the second year. These two groups of programs were compared using (1) the

ratio of responses to questions, (2) the ratio of negative reactions to enthusiastic reactions, and (3) the average number of enthusiastic reactions. Results are shown in TABLE 8.

Although only the best of the 170 programs produced during the first year were repeated, the programs produced during the second year were significantly more effective in eliciting responses, maintaining a positive attitude toward the program, and generating enthusiasm. The data also indicated age and sex differences in the subjects' reactions to the program. The four-year-olds were most enthusiastic about the program, followed by the three- and then the five-year-old subjects. The five-year-old males were least enthusiastic about the program and at all age levels girls responded overtly to questions, suggestions, and directions of the television "teacher" a greater proportion of the time than did boys.

Based on overt behavior of viewers, the television program was best liked by the four-year-old subjects and was of more interest to girls than to boys.

The use of systematic observational systems to provide formative evaluation of preschool television programs can be of significant value in guiding changes in presentation techniques, content, and emphasis. Given a larger number of observers, which in this study were paraprofessionals, or more specific needs, a much more sophisticated observational system could be developed to provide objective data on which to base these decisions.

ANALYSIS OF CHILDREN'S SOCIAL SKILLS DEVELOPMENT AND

THEIR REACTIONS TO A PRESCHOOL TELEVISION PROGRAM

TABLES

TABLE 1

SOCIAL SKILLS CATEGORIES: AN OBSERVATIONAL SYSTEM

Code No.	Category
Initiation	
11	Initiates constructive or neutral statement: a statement that does not impede the completion of the task or interaction between group members. Declarative statements to the teacher; verbal enthusiasm.
12	Initiates non-verbal constructive or neutral action to peer; shows or gives an object to peer.
13	Initiates antagonistic statement.
14	Initiates antagonistic action.
15	Interrupts peer(s).
Question or Request for Help	
21	Asks a question of peer.
22	Requests assistance verbally of peer.
23	Requests assistance non-verbally of peer.
24	Asks a verbal or non-verbal question of the teacher.
25	Listens to the teacher or responds to teacher's question.
Giving Help	
31	Gives help on own initiative or in response to categories 22, 23 or as needed. This is non-verbal.
32	Gives help on own initiative when not needed. This is non-verbal.
Refusing Help	
41	Refuses request for assistance with good reason-verbally or non-verbally.
42	Refuses a reasonable request of assistance--verbally or non-verbally.

TABLE 1 (Cont'd)

Code No.	Category
Group Consciousness	
51	Shows non-verbal enthusiasm.
52	Participates quietly with group on task.
53	Withdraws from group and works alone.
54	Does not work on the project whether alone or with group; watches others, bored, etc.
55	Withdraws for security.
56	Gets distracted by microphone, camera, lights, etc.
Response to Peer	
61	A non-antagonistic verbal response to a non-antagonistic peer statement/action.
71	A non-antagonistic non-verbal response to a non-antagonistic peer statement/action (listening).
62	A non-antagonistic verbal response to an antagonistic peer statement/action.
72	A non-antagonistic non-verbal response to an antagonistic peer statement/action.
63	An antagonistic verbal response to an antagonistic peer statement/action.
73	An antagonistic non-verbal response to an antagonistic peer statement/action.
64	An antagonistic verbal response to a non-antagonistic peer statement/action.
74	An antagonistic non-verbal response to a non-antagonistic peer statement/action.

TABLE 2

EXPECTED[1] AND OBSERVED FREQUENCIES OF TALLIES BY ECE COMPONENT (PACKAGE AND TV-HV) AND BY SOCIAL SKILLS CATEGORY

Categories	Composite Tallies (Package and TV-HV)	Package[5] Exp. F	Package[5] Obs. F.	TV-HV[6] Exp. F	TV-HV[6] Obs. F
INITIATION[2]					
11 Constructive Statement	4667	2316.19	2578	2350.81	2089
12 Constructive action	122	60.54	63	61.42	59
13 Antag. statement	100	49.68	66	50.37	34
14 Antag. action	54	26.80	43	27.20	11
QUES. or REQ. FOR HELP					
21 Questions peer	308	152.86	174	155.14	134
22 Req. asst. (verbal)	7	3.47	4	3.53	3
23 Req. asst. (nonverbal)	6	2.98	4	3.02	2
24 Questions teacher	416	206.46	206	209.54	210
25 Listens to teacher	226	112.16	98	113.84	128
GIVING HELP					
31 Needed	100	49.62	27	50.37	73
32 Not needed	74	36.73	36	37.27	38
REFUSING HELP[3]					
41 With good reason	3	1.49	2	1.51	1
GROUP CONSCIOUSNESS					
51 Enthusiasm	80	39.70	47	40.30	33
52 Quiet participation	20187	10018.61	10187	10168.39	10000
53 Withdraws to work alone	271	134.49	9	136.51	262
54 Stops working	9675	4801.61	5247	4873.39	4428
55 Withdraws for security	3657	1814.93	1119	1842.07	2538
56 Gets distracted	912	452.62	392	459.38	520
RESPONSE TO PEER[4]					
61 NA-V/NA	597	296.29	298	300.71	299
71 NA-NV/NV	1787	886.87	836	900.13	951
62 NA-V/A	7	3.47	7	3.53	0
72 NA-NV/A	42	20.84	27	21.16	15
63 A-V/A	100	49.63	61	50.37	39
73 A-NV/A	23	11.41	20	11.59	3
64, 74 A-V,NV/NA	5	2.49	1	2.52	4
Total	43426	21551.94	21552	21874.07	21874

TABLE 2 (Cont'd)

NOTE: $X^2 = 1024.85$; $\chi^2_{(.005)_{24}} = 45.56$, $p < .005$. In connection with the large χ^2, it should be pointed out that the unit of observation is the three-second tally and not the individual subject; and that the extremely large number of tallies made the test very sensitive to differences.

[1]Expected frequencies were calculated for each category by multiplying the average proportion of tallies, 0.49629 (=21552/43426) in the package group and 0.50371 (=21874/43426) in the TV-HV group, by the corresponding composite tallies for the category.

[2]A fifth initiation category had zero frequency.

[3]A second category, "refusing reasonable request for assistance", had zero frequency.

[4]NA - nonantagonistic A - antagonistic
V - verbal NV - nonverbal

The symbol at the left of the slash sign is the response, and that on the right is peer behavior.

[5]The group which visited a mobile classroom once a week in addition to watching a daily television program and being visited by paraprofessionals.

[6]The group which watched the daily television program and was visited weekly by home visitors.

TABLE 3

REDUCTION OF THE 28 CATEGORIES TO 10 CATEGORIES

New Category Numbers	Original Categories Combined	General Category Names
Nonfacilitating:		
1	55, 56	Withdraws for security; gets distracted
2	13, 14, 15	Initiates antagonistic behavior
3	41, 42	Refuses help
4	63, 73, 64, 74	Responds with antagonism
5	53, 54	Works alone or stops working
Facilitating:		
6	51, 52	Participates quietly with group; nonverbal enthusiasm
7	11, 12	Initiates constructive behavior
8	21, 22, 23, 24	Asks questions or requests help
9	61, 71, 62, 72, 25	Responds positively or without antagonism
10	31, 32	Gives help

TABLE 4

LEVELS OF SIGNIFICANCE OF SOME DIFFERENCES TAKEN FROM THE ANALYSIS OF VARIANCE TABLES

Variable	Source of Variation	$p <$
1 Talking	Age x Sex[1]	.05
2 Participating w/group	Age	.025
3 Exploring situation	Age	.10
4 Need for security	Treatment[2]	.10
4 " " "	Age	.01
5 Antag. activity	Treatment x Age x Sex	.10
6 Withdr./distraction	Treatment	.10
6 " "	Age	.01
6 " "	Sex	.10
6 " "	Treatment x Sex	.10
6 " "	Age x Sex	.10
7 Init. ant. activities	All sources	N.S. at .10
8 Refusing help	All sources	N.S. at .10
9 Resp. w/antag.	Treatment x Age	.10
9 " "	Age x Sex	.05
9 " "	Treatment x Age x Sex	.01
10 Working alone/leaving work	All sources	N.S. at .10
11 Quiet part./Nonverb. enth.	Age	.05
11 " "	Treatment x Age	.10
12 Init. const. behav.	Treatment	.10
12 " " "	Age x Sex	.10

TABLE 4 (Cont'd)

Variable	Source of Variation	P <
13 asking quest/req.help	Sex	.025
13 " "	Age x Sex	.001
14 Resp. constructively	Age	.10
15 Giving help	All sources	N.S. at .10

[1]Sex refers to sex grouping - male, female, mixed

[2]Treatment levels are "Package" and "Tv-HV"

TABLE 5

COMPOSITE 10 x 10 MILLAGE MATRIX OF SUBJECTS IN THE ECE PACKAGE COMPONENT

Total tallies = 21552

CATE GORY	1	2	3	4	5	6	7	8	9	10
1	60	0	0	0	4	5	1	0	0	0
2	0	2	0	0	0	0	1	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	4	4	0	0	199	25	9	1	0	0
6	4	1	0	0	25	382	42	6	13	0
7	2	0	0	0	8	41	57	5	8	0
8	0	0	0	0	2	3	4	2	5	0
9	0	0	0	0	5	15	13	2	24	0
10	0	0	0	0	0	0	0	0	0	2

TABLE 6

COMPOSITE 10 x 10 MILLAGE MATRIX OF SUBJECTS IN THE ECE TV-HV·COMPONENT

Total tallies = 21874

CATE GORY	1	2	3	4	5	6	7	8	9	10
1	128	0	0	0	5	5	2	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	1	0	0	0	0	0	0
5	5	0	0	0	173	24	6	0	3	0
6	4	0	0	0	23	374	35	7	13	0
7	1	0	0	0	6	33	42	4	9	1
8	0	0	0	0	1	3	2	2	6	0
9	0	0	0	0	5	17	8	1	28	0
10	0	0	0	0	0	2	1	0	0	3

TABLE 7

TELEVISION VIEWER BEHAVIOR: AN OBSERVATIONAL SYSTEM

1. Physically Responds to Suggestions, Directions,or Questions: The viewer dances, paints, or moves as suggested or directed by the television "teacher" or shakes his head yes or no to a question.

2. Verbally Responds to Suggestions, Directions,or Questions: The viewer responds by saying something; repeating a poem, words, or letter; answers yes or no.

3. No Response to Suggestions, Directions, or Questions: The viewer does not comply as requested by the television "teacher" either physically or verbally.

4. Verbal Enthusiasm: The viewer says something that indicates he is excited about something in the program. This can be a sound of glee as well as an intelligible word.

5. Non-verbal Enthusiasm: Physical motions such as the clapping of hands that indicate the viewer is excited about something in the program.

6. Verbal Indication of a Negative Reaction: The viewer yawns aloud, says words or makes sounds that indicate disgust, boredom, or a negative feeling about the program.

7. Non-verbal Indication of a Negative Reaction: The viewer looks away from the television screen, leaves the room, plays with a toy or engages in other actions indicating disgust, boredom, or a negative reaction to the program.

GROUND RULES:

1. Whenever verbal and non-verbal behavior occur simultaneously, the tally is placed in the verbal category.

2. When the television "teacher" requests the viewer to engage in a sequence of behavior or say a sequence of words or letters, doing the whole sequence results in only one tally.

3. When the observer is not sure the television "teacher" has requested an overt response, no tally is made in the first three categories. If, despite the vagueness of the "teacher's" remark the viewer responds, this behavior is coded in category 4 or category 5.

4. The observer initially encourages the viewer to watch the program with her but does not coerce him. However, despite the actions of the viewer, the observer watches the whole program and gives the impression of being quite interested in it.

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1. Physically Responds to Suggestions, Directions,or Questions: The viewer dances, paints, or moves as suggested or directed by the television "teacher" or shakes his head yes or no to a question.

2. Verbally Responds to Suggestions, Directions,or Questions: The viewer responds by saying something; repeating a poem, words, or letter; answers yes or no.

3. No Response to Suggestions, Directions, or Questions: The viewer does not comply as requested by the television "teacher" either physically or verbally.

4. Verbal Enthusiasm: The viewer says something that indicates he is excited about something in the program. This can be a sound of glee as well as an intelligible word.

5. Non-verbal Enthusiasm: Physical motions such as the clapping of hands that indicate the viewer is excited about something in the program.

6. Verbal Indication of a Negative Reaction: The viewer yawns aloud, says words or makes sounds that indicate disgust, boredom, or a negative feeling about the program.

7. Non-verbal Indication of a Negative Reaction: The viewer looks away from the television screen, leaves the room, plays with a toy or engages in other actions indicating disgust, boredom, or a negative reaction to the program.

GROUND RULES:

1. Whenever verbal and non-verbal behavior occur simultaneously, the tally is placed in the verbal category.

2. When the television "teacher" requests the viewer to engage in a sequence of behavior or say a sequence of words or letters, doing the whole sequence results in only one tally.

3. When the observer is not sure the television "teacher" has requested an overt response, no tally is made in the first three categories. If, despite the vagueness of the "teacher's" remark the viewer responds, this behavior is coded in category 4 or category 5.

4. The observer initially encourages the viewer to watch the program with her but does not coerce him. However, despite the actions of the viewer, the observer watches the whole program and gives the impression of being quite interested in it.

TABLE 8

COMPARISON OF FIRST AND SECOND YEAR PROGRAMS ON THREE VARIABLES

Variable	1st yr. $\bar{x}$ programs	2nd yr. $\bar{x}$ programs	t*	sig.
Response Ratio	59.22	73.53	4.86	$p<.001$
Enthus. Ratio	59.65	73.22	3.46	$p<.001$
Ave # of Enthus. Res.	5.46	8.38	3.44	$p<.001$

* T-test of difference between uncorrelated means.

ANALYSIS OF CHILDREN'S SOCIAL SKILLS DEVELOPMENT AND

THEIR REACTIONS TO A PRESCHOOL TELEVISION PROGRAM

FIGURES

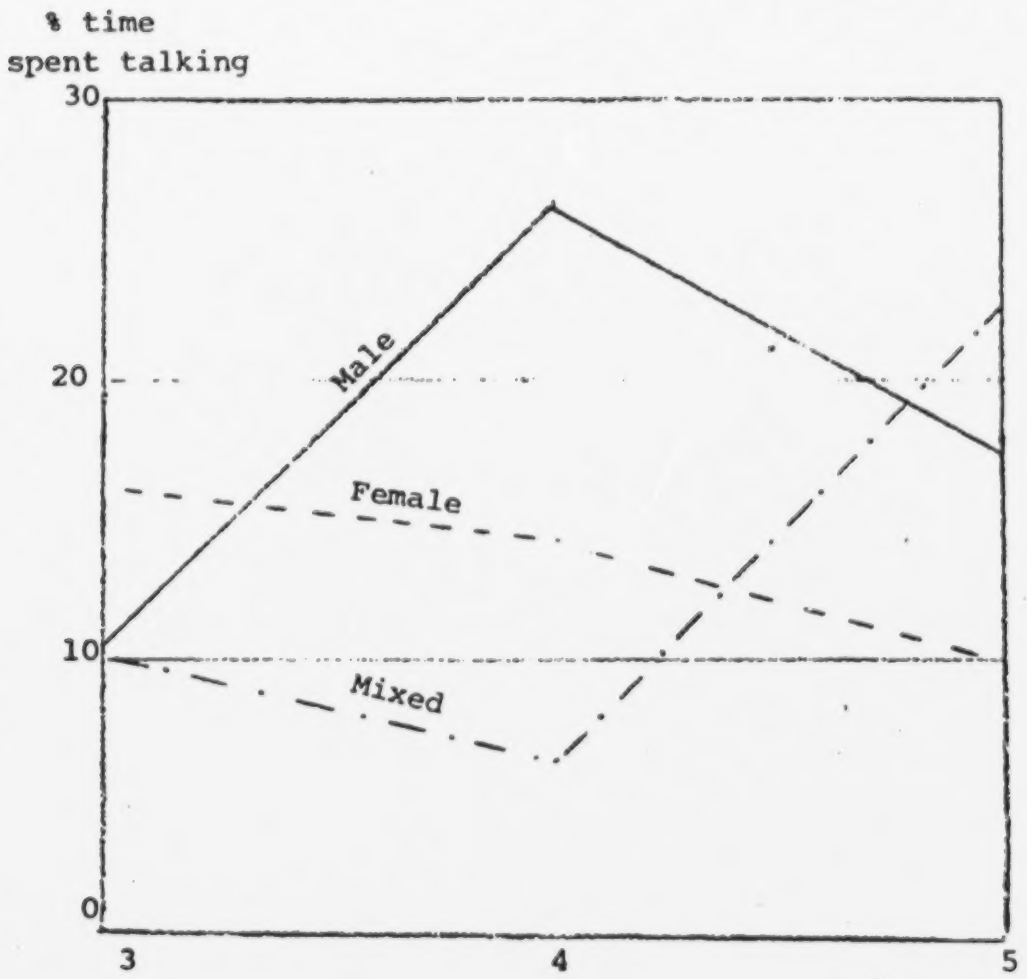

FIGURE 1

AGE-SEX•GROUPING INTERACTION ON THE PROPORTION OF TIME SPENT IN TALKING

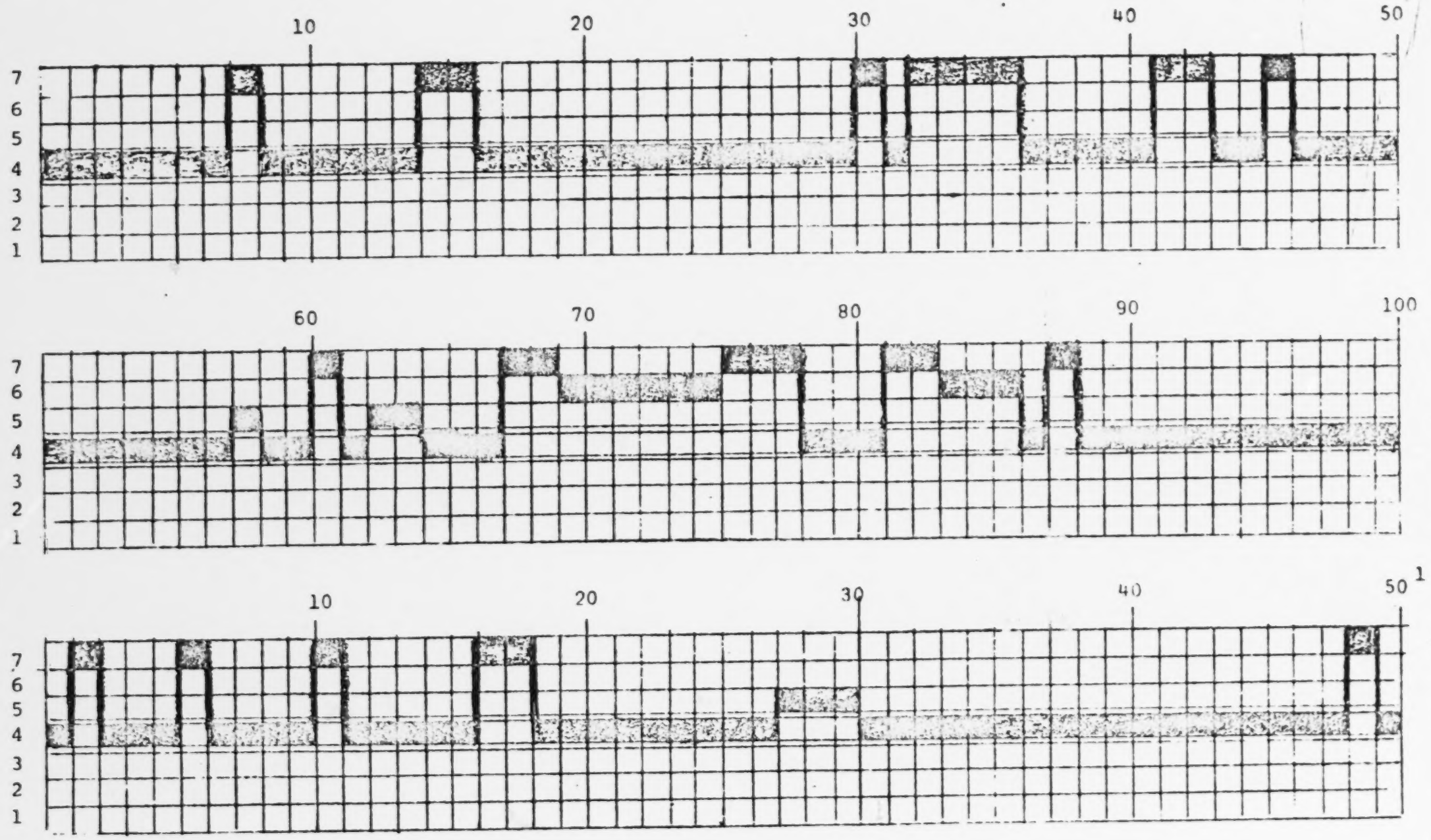

FIGURE 2 :--SAMPLE TIME-LINE DISPLAY OF THE APPROXIMATE FIRST SEVEN AND A HALF MINUTES OF INTERACTION SHOWN BY A PACKAGE FIVE-YEAR-OLD MALE SUBJECT (SUBJECT ONE)

[1]One hundred fifty tallies represent approximately 450 seconds or seven and a half minutes of interaction.

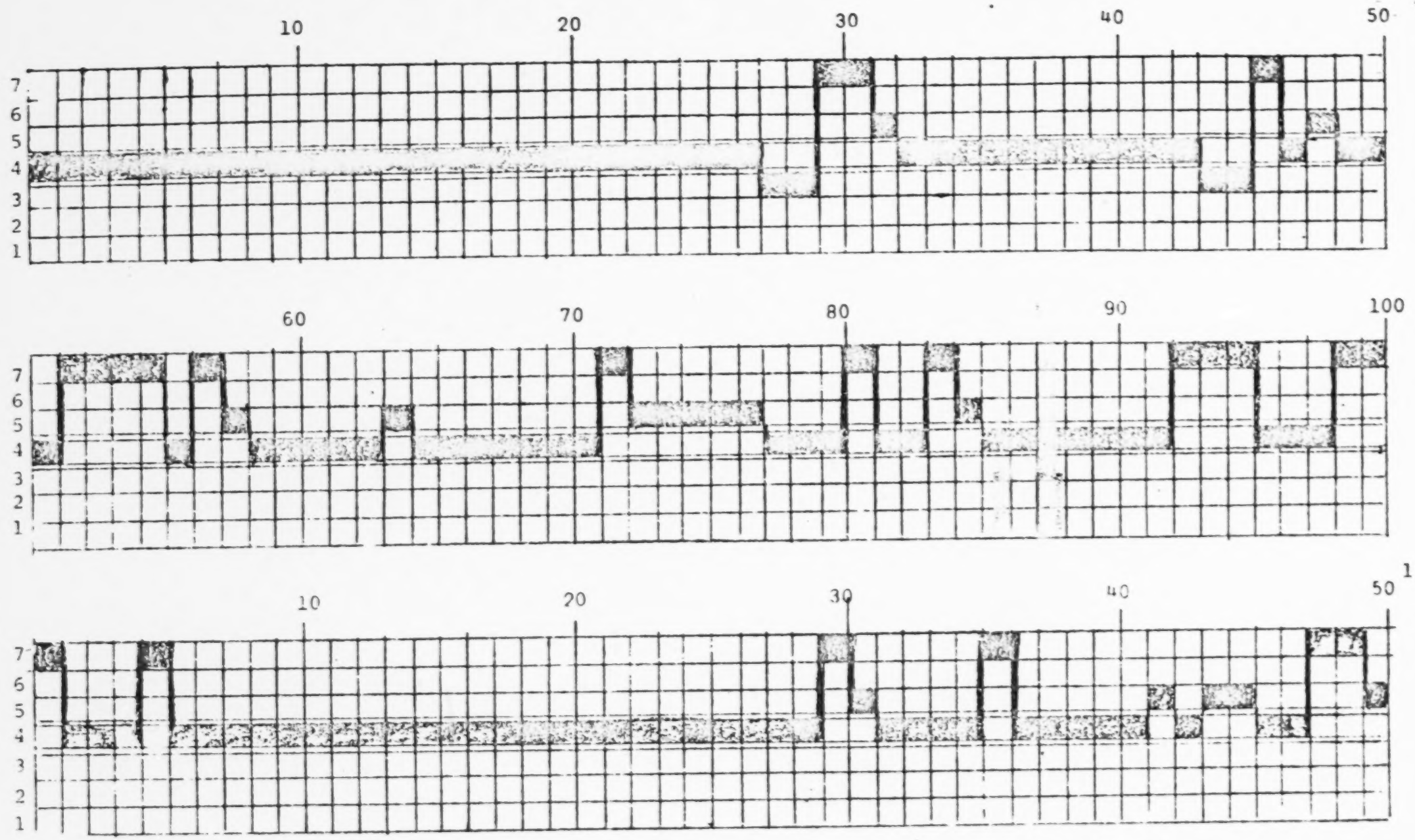

FIGURE 3 :--SAMPLE TIME-LINE DISPLAY OF THE APPROXIMATE FIRST SEVEN AND A HALF MINUTES OF INTERACTION SHOWN BY A TV-HV FOUR-YEAR-OLD FEMALE SUBJECT IN THE FEMALE GROUP (SUBJECT TWO)

[1]One hundred fifty tallies represent approximately 450 seconds or seven and a half minutes of interaction.

NAME _____ H.V. _____ DATE _____

AGE _____ SEX _____ GROUP _____

	NVR	VR	NR	V. ENTHUS	NV ENTHUS	V NEG	NV NEG	
1st 5 min.								0 ¼ ½ 3/4 ALL
2nd 5 min.								0 ¼ ½ 3/4 ALL
3rd 5 min.								0 ¼ ½ 3/4 ALL
4th 5 min.								0 ¼ ½ 3/4 ALL
5th 5 min.								0 ¼ ½ 3/4 ALL
last 3 min.								0 ¼ ½ 3/4 ALL

REMARKS:

Figure 4: -- TELEVISION RESPONSE CODE SHEET